Attachment 6 Monitoring, Assessments and Performance Measures

Introduction

This attachment presents anticipated monitoring, assessment, and performance measures for each of the projects included within this proposal. In accordance with the PSP, this attachment includes the following information:

- The metrics used to evaluate project performance
- The monitoring systems in place to verify project performance
- A description of the data collection process and how the data will be evaluated to ensure the goals and objectives of the IRWM Plan are being met
- A discussion of how the project is consistent with the Basin Plan
- A project performance measures table including
    - Project Goals
    - Desired Outcomes
    - Output Indicators
    - Outcome indicators
    - Measurement Tools and Methods
    - Targets

The projects included in this Proposal are high priority projects identified by the San Francisco Public Utilities Commission (SFPUC) for implementation to manage stormwater runoff to reduce flood damages, and to meet immediate water quality needs related to combined sewer systems by reducing the volume of combined sewer discharges and increasing the amount of flows receiving secondary treatment before being discharge to San Francisco Bay.

The projects are:

1. Sunnydale Flood and Stormwater Management Sewer Improvement Project
2. Cesar Chavez Flood and Stormwater Management Sewer Improvement Project

Both projects consist of installation of new auxiliary and replacement sewer facilities to address conditions that have led to past flooding and to improve reliability of the combined sewer system.

Project Performance Evaluation Metrics

Project performance will be evaluated by conducting post-project performance monitoring to ensure that flooding is managed and minimized under the 5-year storm, and that the water quality and system reliability objectives of the projects are realized. These metrics are further described in the individual project performance measures tables. In addition, to ensure that project implementation is consistent with the projects' Work Plans, Budgets and Schedules, construction progress for each project will be tracked with respect to established milestones in the project schedule, and budget expenditures will be tracked with respect to the established budget.

The performance targets described in the project performance measures tables are feasible to meet within the life of the Proposal.

Monitoring Systems to Verify Project Performance

The main monitoring systems in place to verify project performance include conducting field observations, tracking flooding complaints, and developing maps showing the spatial distribution of crew observations and flood complaints. These monitoring systems and other water quality monitoring systems are described in the individual project performance measures tables.

Consistency with Basin Plan

The projects included in this Proposal are located in the San Francisco Bay Area IRWM Region, which is coterminous with the Regional Water Quality Control Board's (RWQCB) Region 2. The Basin Plan identifies water quality objectives for water bodies within its respective region, and lists beneficial uses for the San Francisco Bay (Bay). Hydraulic modeling has demonstrated that the Sunnydale project accomplishes water quality improvement of the Bay through reducing the volume of combined sewer discharges (CSDs) by 3 million gallons, meaning during wet weather, more flows from the combined sewers would receive full secondary treatment at the Southeast Water Pollution Control Plant (SEWPCP) instead of only primary level-equivalent treatment before being discharged to the Bay. Hydraulic modeling has shown that the Cesar Chavez project will reduce the volume of stormwater entering the combined sewer system and the Bay by 860,000 gallons annually through implementation of green stormwater infrastructure. Both projects in this Proposal will benefit Bay water quality through the reduction of pollutants associated with stormwater and primary-level treated combined sewer discharges to the Bay, and are therefore consistent with the Basin Plan.

Consistency with IRWM Plan Goals and Objectives

Flood and water quality data collected from monitoring of the projects will be evaluated against SFPUC's level of service goals of 1) providing flood protection in the 5-year storm which is consistent with the IRWM Plan goal of reducing flooding to protect public health, safety and property, and 2) to continue to comply with State and federal regulatory treatment requirements which is consistent with the IRWM Plan goal of protecting the quality of water resources in the Bay.

Project Performance Measures

For each project included in the Proposal, a project performance measures table (**Tables 1 and 2** on the following page) has been developed which outlines the project goals, desired outcomes, output indicators, outcome indicators, measurement tools and methods and targets of the project.

Table 1: Project Performance Table for Sunnydale Flood and Stormwater Management Sewer Improvement Project

Project Goals	Desired Outcomes	Indicator Used to Track that Desired Outcome is Met	Metric to Show the Potential Improvement in Project Conditions	Measurement Tools and Methods	Measurable targets
Minimize Flooding	Enhanced levels of flood protection	Reduced risk of flooding associated with the 5-year storm event	Reduction in flooding observed	1. Conduct real-time 311 flooding complaint monitoring 2. Field crews from the Department of Public Works (DPW) to conduct field observations to verify project performance during wet weather conditions 3. Develop stormwatch map that tracks spatial distribution of complaints and crew observations, etc.	Project performance is consistent with the modeled conditions associated with the 5-year storm event
Protect surface water quality	Protect surface water quality of the San Francisco Bay	Meet NPDES permit requirement to effectively characterize overflow impacts and the efficacy of Combined Sewer Discharge (CSD) controls	1. Reduction in pollutant loading to the Bay from reduced volume of CSDs. 2. Long term average number of combined sewer discharges from the Sunnydale basin.	1. Conduct water quality monitoring of wet weather discharges at Sunnydale discharge location (Outfall no.43). 2. Track beach postings for Candlestick Point State Recreation Area during and following CSD events.	1. Continued compliance with NPDES permit 2. Meet the design standard of long-term average of 1 CSD for the Sunnydale basin (Outfall no. 43)
Provide a compliant, reliable, resilient and flexible system that can respond to catastrophic events	Existence of redundancy to allow the redirection of flows in the event of a catastrophic failure	100% redundancy for critical infrastructure	Completion and operation of auxiliary sewer infrastructure	Verify functionality and performance of auxiliary sewer to provide 100% redundancy	Project performance is consistent with the modeled conditions under a catastrophic event

Table 2: Project Performance Table for the Cesar Chavez Flood and Stormwater Management Sewer Improvement Project

Project Goals	Desired Outcomes	Indicator Used to Track that Desired Outcome is Met	Metric to Show the Potential Improvement in Project Conditions	Measurement Tools and Methods	Measurable targets
Minimize Flooding	Enhanced levels of flood protection	Reduced risk of flooding associated with the 5-year storm event	Reduction in flooding observed	1. Conduct real-time 311 flooding complaint monitoring 2. Field crews from the Department of Public Works (DPW) to conduct field observations to verify project performance during wet weather conditions 3. Develop stormwatch map that tracks spatial distribution of complaints and crew observations, etc.	Project performance is consistent with the modeled conditions associated with the 5-year storm event
Protect surface water quality	Protect surface water quality of the San Francisco Bay	Reduced stormwater discharge to the sewer system by the LID components	Reduction in pollutant loading to the Bay from reduced volume of stormwater discharge to the sewer system.	Stormwatch observation of downstream flooding described above.	Project performance is consistent with the modeled expected annual performance.
Provide a compliant, reliable, resilient and flexible system that can respond to catastrophic events	Existence of redundancy to allow the redirection of flows in the event of a catastrophic failure	50%-100% redundancy for critical infrastructure	Completion and operation of auxiliary sewer infrastructure	Verify functionality and performance of auxiliary sewer to provide 50% redundancy in wet weather and 100% in dry weather.	Project performance is consistent with the modeled conditions under a catastrophic event